UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 06, 2015

4SFD-SRSIB

MEMORANDUM

SUBJECT: Review of the "Supplemental CMS Report" covering sampling in Church House Branch and Drainage Ditches for the International Paper Site in Wiggins, Mississippi

FROM: Brett Thomas, Ph.D., Life Scientist
Scientific Services Section
Superfund Division, Superfund Resource and Scientific Integrity Branch

THRU: Glenn Adams, Chief, Scientific Services Section

TO: Doug McCurry, Senior Corrective Action Specialist, RCRA Division

Per your request, I briefly reviewed the "Supplemental CMS Report, Closed Former Wood Treating Units, International Paper Company", for the Wiggins, Mississippi facility. The purpose of the review was to determine if the data reported in this CMS report was the same as the data reviewed in the data package that was reviewed in July 2015, and if so to determine if the conclusions regarding the data analysis reached by the report authors in this CMS report appeared supportable. The text from my July 30, 2015 memo for the review of the data package is included as the second part of this memo, as that is where my conclusions and recommendations for further work are.

Specific Comments, CMS Report

Section 5.1, Surface Soil: While I don't necessarily agree with all of the bullet points in the "Soil Summary", I do agree that overall the soils appear to not be appreciably contaminated regarding likely harm to ecological receptors of concern, given the data collected.

Section 5.2, Sediment: In the last part of this Section, on page 30, I disagree with the third bullet from the end that states that the contamination measured in the sediments presents insignificant risk to ecological receptors. The main reason for this is that I believe the creek was not sampled

thoroughly enough to put sufficiently tight bounds on the PAH contamination measured in Samples SD-2, SD-7 and SD-8, samples for which the PAH contamination was high enough to potentially cause harm to the benthic community. This is described further in the July 30, 2015 memo comments below.

Section 5.3, Surface Water: In the last part of this Section, on page 32, I disagree with the second bullet from the end that states that the contamination measured in the surface water presents insignificant risk to ecological receptors. This is because of the copper contamination measured at SW-2. I believe that the potential source of this copper should be determined and further sampling should be performed to determine the frequency and duration of elevated copper concentrations in the surface water at SW-2.

Section 6.0, Summary and Conclusions: In the second paragraph on this page, the report states that "A pattern of ongoing release is not indicated by the results." I believe this is true EXCEPT for the copper at SW-2.

Data Comparison between the July 2015 Sampling Report and the Supplemental CMS Report: For the Supplemental CMS Report, the analytical results presented in Table 5 (Sediment Analytical Results), Table 6 (Sediment Analytical Results, OC Normalized), and Table 7 (Surface Water Analytical Results) were spot checked against the Tables in the July Sampling Data Report, and those data that were spot checked all matched, therefore it is assumed that all of the data in the Supplemental CMS Report and the Sampling Data Report are identical (which they are supposed to be).

My Conclusions: I would recommend considering further investigation of the copper at SW-2, the PAHs at SD-2, SD-7 and SD-8 [and dioxin at SD-3 and SD-5].

Text from my July 30, 2015 memo "Review of Sampling Data for Church House Branch and Drainage Ditches for the International Paper Site in Wiggins, Mississippi":

Per your request, I briefly reviewed the surface water, soil and sediment analytical data taken in the eastern drainage ditches and Church House Branch near the International Paper facility in Wiggins, Mississippi. The purpose of the review was to determine if ecological risk was likely to be posed from the contaminants measured in the samples. It appeared from the data that one water sample (SW-02) had elevated concentrations of copper, and 3 sediment samples had elevated concentrations of PAHs. Recommendations are given for consideration of refining the risk estimates provided by these samples.

Specific Comments

Surface Water (Table 1): Elevated copper was measured at SW-02, roughly 3x-6x the acute value, but it is diluted out by SW-03. Where is the copper coming from? It is possible that if this copper is present at these measured concentrations more than rare occasion that it could have a deleterious effect on aquatic life in this section (near SW-02) of Church House Branch. Were filtered water samples taken as well? And are these unfiltered sample results? If these are unfiltered samples, some of this contamination could be due to suspended sediment-bound copper, although the screening values are for total (unfiltered) samples. It may be worth looking at a filtered sample at SW-02 and comparing this to a dissolved benchmark for comparative purposes. If the copper is found to be truly elevated, it is recommended to determine the frequency and duration of elevated copper concentrations in the surface water at SW-2. There did not appear to be any other analytical findings of concern in surface water for the analytes measured.

Soils (Table 2): The soils appeared to not be appreciably contaminated regarding harm to ecological receptors of concern, given the data collected.

Sediments (Table 3A):

- The metals that were measured are not expected to pose a problem for ecological receptors.

- For Pentachlorophenol, sediments at SD-3 and SD-5 had PCP concentrations that significantly exceeded the screening value. However, since the organic carbon content was measured and was higher than 1% (the assumption the EPA Region 4 screening value is based on), I adjusted the calculated screening value based on these higher OC contents. After doing so, neither SD-3 nor SD-5 had PCP exceedences compared to the adjusted screening value.

- For PAHs, I do not see where the screening values they used in Table 3A came from. If an older version of the screening values is what I gave them, I apologize, but I think I gave them our most current draft. Anyway, Table 2b in our current screening tables for sediments (the table that is referenced in Table 3Aa of this report) has total PAH screening value of 1,610 ug/kg for 1% OC. So for this screening table, the total of the PAHs would be summed and compared to this number. This screening number could also be adjusted by scaling it to the organic carbon content in the sediments.

Sediments (Table 3B, PAHs only): I spot checked a few of the calculations, and they were accurate, so I am assuming all calculations in this Table are accurate. EarthCon is correct, the EPA Table 2C has incorrect units, and I apologize for that. Ended up confusing me too, for a while. Samples SD-1, 3, 4, 5, 6, 9 and 10 do not appear to have PAH concentrations of concern in them. Samples SD-2, 7 and 8 do have PAH concentrations that exceed narcosis-based benchmarks, which do take to organic carbon content into account. The PAH concentrations are not extremely high, but are enough to cause moderate concern. It is tough to make decisions

about the likelihood of risk of adverse effects in this moderate or "gray area". There are several ways to further refine these risk estimates. One would be to do more sampling around these sample points to determine the spatial extent of the elevated PAH concentrations, to determine how much area might be affected if there is any effect. A second would be to do sediment toxicity testing on these 3 samples (or new samples from these three sample points) to determine if adverse effects are seen. A third might be to look at the benthic communities in these three areas and compare them with those from uncontaminated areas to see if there is a difference.

I would recommend considering option #2, as doing sediment toxicity testing may be the most direct way to determine the presence or absence of adverse effects from the contamination in the sediments. Toxicity testing is usually helpful in these "moderately contaminated" situations to most directly determine the likely presence or absence of effects from the contamination.

Thank you for the opportunity to look at this report. Please let me know if you would like to discuss these findings or recommendations. If so, please contact me at (404) 562-8751 or at thomas.brett@epa.gov.

Brett Thomas